

## ABSTRACT

5 The present invention relates to undifferentiated human embryonic stem  
cells, methods of cultivation and propagation and production of differentiated  
cells. In particular it relates to the production of human ES cells capable of  
yielding somatic differentiated cells *in vitro*, as well as committed progenitor  
cells such as neural progenitor cells capable of giving rise to mature somatic  
cells including neural cells and/or glial cells and uses thereof.

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This invention provides methods that generate *in vitro* and *in vivo* models of  
controlled differentiation of ES cells towards the neural lineage. The model,  
and cells that are generated along the pathway of neural differentiation may  
be used for: the study of the cellular and molecular biology of human neural  
development, discovery of genes, growth factors, and differentiation factors  
15 that play a role in neural differentiation and regeneration, drug discovery and  
the development of screening assays for teratogenic, toxic and  
neuroprotective effects.

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